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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,137	02/26/2002	Guangzhi Z. Zhang	NUFO011	4159

7590 03/01/2004  
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EXAMINER

NGUYEN, TUAN N

ART UNIT PAPER NUMBER

2828

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/086,137

Applicant(s)

ZHANG ET AL.

Examiner

Tuan N Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

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### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Response to Amendment*

1. In respond to applicant's amendment filed 11/03/2003, claims 1, 12, 24, 31 have been amended, and claims 1-38 are pending.
2. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or non-obviousness.
- 8-11,
4. Claims 1-6, 8-11, 24-27, 31-32, and 37-38 are rejected under 35 U.S.C. 102(a) as being unpatentable over Zorabedian et al. (US 6526071)(60/152,042) in view of Goodwin et al. (US 5114226) or Nerin et al. (US 6100516).

With respect to claims 1, 24, 31, and 37 Zorabedian '071 shows a laser apparatus comprising a gain medium, a wavelength selecting element, and non-reciprocal pickoff position positioned in said light beam and pick-off a portion of light returning from tuning means, and light feedback to the gain medium (Col 7: 0-12; Col: 8-9; Col 12: 30-67), (F 4: 202, 414, 226, 264), (F 2a: 222, 220, 230, 228, 210, 201). The claim further require an element to pickoff a portion of the light beam and feed along another path different from said optical path. Goodwin '226 (Fig 3: 104) or Nerin '516 (Fig 1: 14) disclose the use of beam splitter to pickoff a portion of the beam to direct the beam along a different path different from said optical path. For the benefit of having a reflector directing resonating beam into another direction for detection or feedback calculation, it would have been obvious to one of ordinary skill in the art to provide Zorabedian '071 the element as taught or suggested by Goodwin '226 or Nerin '516. Since claims 24, and 31 recites the same or identical elements/limitations it is inherent to use patents ('071) to recite the method of laser operation, product by process.

With respect to claims 2-6, 25-27, 32, 38 Zorabedian '071 shows in figures 2a, 2b, 3-4 the non-reciprocal pickoff comprises a linear polarizer and the non-reciprocal polarization rotator, where they are angularly substantially equal and balanced with each other.

With respect to claims 8-11 Zorabedian '071 shows in (figure 4: 414, 310; Fig 2-3) the wavelength selecting having grating, lying at an angle and tunable.

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5. Claims 7, 12-22, 23, 28, 30, 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zorabedian et al. (US 6526071)(60/152,042) in view of Goodwin et al. (US 5114226) and Ershov (US 5917849).

With respect to claims 7, 12, 28 Zorabedian '071 and Goodwin '226 discloses the above and light feedback to the gain medium (Col 7: 0-12), except a reflector positioned after the wavelength selection element that reflect back to the gain medium. Ershov '849 discloses a laser apparatus having wavelength selection element with mirror that reflect beam to the laser as an external laser cavity. For the benefit of having a reflector resonate the output beam back and act as external resonator with the gain medium, it would have been obvious to one of ordinary skill in the art to provide Zorabedian '071 the element as taught or suggested by Ershov '849.

With respect to claims 13-20, 23, 30 Zorabedian '071 shows in (figures 2a, 2b, 3-4: 414, 310) the non-reciprocal pick-off comprise a linear polarizer and the non-reciprocal polarization rotator, where they are angularly substantially equal and balanced with each other. He also shows the wavelength selecting having grating, lying at an angle and tunable.

With respect to claims 21, 35, 36, Ershov '849 shows the use of beam splitter (Fig 2,3: 22). For the benefit of having a beam splitter, it would have been obvious to one of ordinary skill in the art to provide Zorabedian '071 the element as taught or suggested by Ershov '849, for the benefit of (for example) feedback for further amplification.

With respect to claims 22, 33, 34, Zorabedian '071 shows in (Col 6: 27-30) and (figures 2a: 262, 264, 222, 200-290) the non-reciprocal rotator comprises a Faraday rotator.

***Conclusion***

6. The prior art made of record and relied upon is considered pertinent to applicant's discloses.

Cruz (US 4243877), Emoto et al. (US 4687916), Falk et al. (US 4594000), Zorabedian (US 6108355) shows the use of splitter or non-reciprocal pickoff to pick part of the beam for further processing

7. Applicant's amendment necessitated the new ground of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

***Communication Information***

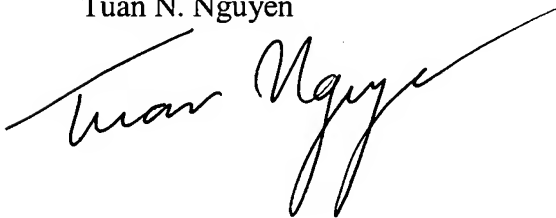
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (703) 605-0756. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Tuan N. Nguyen



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